Art. XXI.—Contributions to the Flora of Australia, No. 13.

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AND

JEAN WHITE, D.Sc.

(With Plates LVI.-LX.).

[Read 9th December, 1909].

ALLIUM SCORODOPRASUM, L. (Liliaceae). "Sand Leek.

Greenvale, North-eastern district, Victoria. James Musgrove, November, 1908 and 1909.

A native of Europe and Western Asia, and now may be considered as naturalized in Victoria. The umbel is occasionally reduced to a head of bulbs without any flowers. These maintain the plant locally, but do not spread it in the same way that seed do. Old bulbs will usually flower, especially after being dried off. The plant is not poisonous or actively injurious, but is a useless weed, capable of becoming troublesome if neglected.

Angianthus axiliflorus (W. V. Fitzgerald, MS. ined.), Ewart and White, n. sp. (Compositae).

Rather rigid herbs 3-4 inches in height. There is one woody mainstalk which gives off short lateral branches from the axils of the alternate leaves. Leaves very pale green, only very few on the main stem, but crowded and tuft-like on the short lateral branches; 3-5 lines long, sessile, slightly ensheathing at the base, linear-lanceolate, glabrous and somewhat rigid and pointed.

Inflorescence of lateral or terminal compound heads. Each compound head is surrounded by a number of leaf-like glabrous

bracts, which form a general involucre. There are 5-8 partial heads in each compound head, and the whole is 3 to 6 millimetres in diameter.

Each partial head is 1 or 2 flowered, and is surrounded by 6 scarious and quite glabrous bracts, of which the two outermost are small, one extremely so, being only just visible to the naked eye. Of the 4 larger surrounding bracts the 2 lateral ones are somewhat conduplicate, and the 2 inner are slightly concave. The partial heads are very shortly stalked.

The achene is short, nearly as broad as long, with no sign of a break, flattened and covered with fairly long white hairs.

A pappus is present in the form of a ring of short white bristles surrounding the base of the corolla tube. Base of the floret slightly thickened, corolla 5-toothed, pale yellow in colour, Anthers finely tailed at the base, style branches not thickened, not spreading.

Cowcowing, W. Australia. Max Koch, Oct., 1904. No. 1196.

This species was received, marked W. V. Fitzgerald inedit, from both the collector and the Sydney Herbarium. It appears to be a valid new species, but no published description has hitherto been issued. The affinities of the plant are somewhat difficult to define, but in the bracts of its partial heads, and in the pappus, it comes nearest to A. brachypappus, F. v. M., and is probably best placed between that species and A. pleuro-pappus, though differing widely from both plants in its external habit and glabrous character.

ASTER SUBULATUS, Michx. (Compositae).

An American weed introduced into Victoria from N.S. Wales, where it is common, and has long been known as A. dumosus, L.

As the identification appeared doubtful, in 1906, after consulting the Sydney Herbarium, reference was made to Kew, where the identification was confirmed, and the name recorded by me (Proc. Roy. Soc. Vict., xix., 34, 1906) on the basis of these authorities.

The Gray Herbarium, however, refers it to Aster subulatus, Michx., from specimens forwarded by the Sydney Herbarium. This identification is accepted by Mr. Maiden (Proc. Linn. Soc.

of N.S. Wales, 1909, 34, p. 363), and appears to be correct. Victorian specimens also agree closely with some from the Paris Museum, marked *Tripolium conspicuum*, D.C., which in the Botany of California is made A. divaricatus, Nutt, so that a further question of synonymy arises. The Victorian specimens are close to, without exactly matching, those of A. divaricatus, Nutt, but throughout the whole genus we have variable species with badly-defined boundaries. Aster dumosus differs from A. subulatus in its blunter, more obtuse bracts.

Caladenia ixioides, Lindl. = C. gemmata, var. ixioides. (Orchideae).

Upper Swan R., Miss Sewell, 1883; Woorooloo, W. Australia, Max Koch, Dec., 1906. The plant is merely a yellow flowered variety of the blue flowered *C. gemmata*. Bentham (Flora Austr., p. 389) retained the species, but admitted it might be a variety only. Fitzgerald (Australian Orchids) found the floral structure so identical with that of *C. gemmata* as not to need a separate plate, but considered the species should be retained for the convenience of collectors.

Slight variations in the shape of the labellum occur in the blue flowered forms of C. gemmata as well as in the yellow ones. The latter appear to be rarer, and of localised distribution. Since yellow is a more primitive colour than blue, the yellow form is probably the original type, and has been suppressed by the blue forms whenever they have come in contact, the two forms not appearing to grow together.

It is not possible to distinguish herbarium specimens of these two "species" if the colour has been completely lost.

CALADENIA ROEI, Benth.

The leaves up to $4\frac{1}{2}$ inches in length. Cowcowing, W. Australia. Max Koch, Dec., 1904.

Calocephalus Skeatsiana, Ewart and White, n. sp. (Compositae). After Professor Skeats.

A small, somewhat woody plant about 4-7 inches in height, branching freely from the base. All the stems, especially when

young, are more or less covered with white hairs. The leaves are 1-1 an inch long, with short petioles and densely covered on both surfaces with soft, woolly, white hairs, linear-lanceolate. flat, slightly pointed, alternate, a few opposite. Flower heads compound on short axillary branches springing from the main branches or from the secondary ones. The diameter of each compound head almost spherical, 3-4 millimetres diameter, but possibly larger when fully ripe. The peduncles and outer bracts of the involucre are densely covered with white hairs. There are only a few bracts in the general involucre; 2 or 3 of the outermost are almost leaf-like, have a filiform scarious tip, and are covered on both sides with long, soft white hairs. The other bracts of the general involucre have a leaf-like centre with scarious margins, a bunch of hairs each side, and conspicuous, scarious, not radiating tips. The receptacle is apparently branched. There are 3-4 partial heads in each compound head, and each is very distinct and very slightly flattened, being almost round in outline. There are 20-30 bracts round each partial head, all of which have radiating tips and are exactly similar to the inner bracts of the general involucre. The more central bracts of the partial heads have thin scarious tips incurving over the top of each partial head. Inside the innermost bract is a small cavity in which are situated 3-8 florets, with a quantity of upright soft, white woolly hairs between them. Each flower appears to be hermaphrodite, but the achene is very deciduous in the dried specimens. The achene is very small, obtuse at the tip, and is slightly hairy. The pappus consists of a varying number of long, plumose, soft, woolly white strands, which may or may not be very slightly united at the base to form an imperfect ring. The corolla is pale yellow, and 5-toothed; the floret is thickened at the base. The anthers are united, and have short, fine tails. The style is divided into two branches, which are spreading and are not thickened at their bases

Watheroo Rabbit Fence, West Australia. M. Koch, Dec., 1906. No. 1544.

A specimen from the Plantae Preissianae of Lehmann (vol. i., p. 490, No. 71) is allied in some respects to this species, but being without fully developed flowers, cannot be exactly placed.

Lehmann remarks:—"Plantae quoad genus omnino dubia; fortasse ad Angiantheas referenda," but as far as can be determined from the heads, bracts and immature pappus, it more closely resembles *Calocephalus*. It differs from the present plant in the indumentum, shape and position of leaves, shape and number of bracts, etc.

Calocephalus Skeatsiana differs widely in external appearance from all other species of Calocephalus, but nevertheless in the involucre, bracts, partial heads, pappus, etc., comes within the range of this genus, and older specimens will probably approach Calocephalus more closely in external appearance. It has been named Eriochlamys Knappi, F. v. M., in W. Australia, but is quite different to that species externally and in the heads and involucre, though alike in the florets and in the presence of a pappus.

Calystegia (Convolvulus) Soldanella, L. (Convolvulaceae).

Three-mile Beach, National Park, Audas and St. John, Oct., 1909.

This cosmopolitan plant is found on the shores of all the temperate regions of the globe. The sole Victorian record was from Wilson's Promontory, by Mueller, in May, 1853, of a doubtful non-flowering specimen, placed by him as a variety "reniformis" of C, sepium. The plant is not recorded from any other locality in Victoria, but there is no reason to doubt its being native to the present locality. It helps to bind the sand on sea coasts.

Casuarina distyla, Vent., var. Prostrata, Maiden and Betche. Audas and St. John, Wilson's Promontory, Oct., 1909.

The variety has the branchlets finely hairy, and has not previously been recorded from Victoria.

ERIOCHLAMYS KNAPPII, F. v. M. = CALOCEPHALUS KNAPPII (F.M.), Ewart and White. (Compositae).

This plant differs from Eriochlamys Behrii, the only species of this genus, in:—

(1) The compound heads are very strongly developed.

- (2) The florets have a pappus of fine hairs, plumose at the tip, as in Calocephalus Skeatsiana.
- (3) The outer bracts of the partial heads are small, narrow, are green and opaque, with scarious tips. The inner ones are completely scarious, and are very narrow, with conspicuous tips.

In Calocephalus Skeatsiana, the partial heads are still more strongly developed, with a marked general involucre, and the bracts of the partial heads are somewhat similar, with a green foliose centre, scarious margins, and non-radiating tips. In both species there is a strong development of fine wool on the bracts around the partial heads.

Probably *Eriochlamys Behrii*, S. and M., is not the only species of this genus in Australia. A specimen from Balonne, R. Henry Wehl, 1896, has the outer and inner bracts resembling those of *Eriochlamys*, and has an undeveloped pappus. The material is, however, insufficient for description.

Calocephalus Knappii is known from the following localities: Finke R., South Australia, Rev. H. Kempe, Dec., 1879, 1880 and 1882. Between Gascoyne and Fortescue Rivers, H. S. King, 1885.

Galium Murale, All. (Rubiaceae).

This small plant, a native of the Mediterranean region, is often overlooked on account of its rather small size, but is now frequent in springtime, especially in pastures.

North-west, West and South-west of Victoria. F. M. Reader, 1909.

Hakea Pritzelli, Diels.; Fragm. Phytog. Austr. Occid., p. 163 = H. Glabella, R. Br., sub-species H. prostrata, R. Br.

The Melbourne Herbarium contains a perfect series of transitions between this variety or sub-species and the type H. glabella. These specimens, including several originally named H. amplexicaulis, and partly transferred by Bentham, partly by Mueller to H. glabella, including Oldfield's Murchison R. specimen, were apparently overlooked by Diels, and in any case if a new species is to be raised it would need to be under the name H. prostrata, R. Br., although the original description is short

and the name not particularly appropriate. Size, scent, colour and habit are among the less satisfactory features on which to base species.

Halgania Lehmanniana, Sond. In Plantae Preissianae, vol. ii., p. 238, (1846-7). (Solanaceae).

Bentham (Flora Australiensis, vol. iv., p. 401), although he had not seen a specimen, considered from the published description that the plant was a form of *H. Preissiana*. The Kew Index similarly suppresses the species. It is, however, valid, differing from *H. Preissiana* in the indumentum, shape of the leaves, smaller flowers and glabrous calyx, with less sharply pointed segments. In *H. Preissiana* the leaves and stems are sprinkled with large, simple, whitish, suppressed hairs, which are replaced in *H. Lehmanniana* by a scurfy tomentum, mainly on the stems, of very short, erect, branching or stellate hairs.

HALGANIA TOMENTOSA, R. Helms M.S., Ewart and White, n. sp.

West of Red Kangaroo Hill, R. Helms, November, 1891.

A somewhat woody herb 5-10 inches high in the specimens examined. Stems wiry, densely beset with rather short, white, felt-like hairs. Leaves rather thick in texture, 2-5 lines long, shortly petiolate, entire margins, alternate; like the stem, covered thickly with white, felt-like hairs, midrib hardly visible on the under surface, vertical, and with a palisade layer on both surfaces. Pedicels 3-6 lines long, and covered with brown, felt-like hairs. Flowers solitary, terminal, each with a small brown bract, each flower about 4 lines in diameter. Calyx lobes 5, except at the extreme base, 1.5-2 lines long, the outside covered with short brown hairs, narrow, and only very slightly obtuse. Petals 5, broad, acute, free except at the extreme base, exceeding the calyx lobes, probably blue, but fading to brown in dried specimens. Anthers slightly pubescent, the lobes not very conspicuous, about 3 lines long.

Ovary 2-celled, style long and slender. Fruit a superior, dry, 2-chambered capsule about 2.5 lines long, with the style persistent.

This species is apparently nearest to *Halgania Solanacea*, from which it differs in the following respects:—

- (1) Leaves less obtuse, smaller, thicker in texture, much more densely beset with white felt-like hairs, and the midrib not prominent underneath.
- (2) Calyx lobes narrower, less obtuse, and less than 3 lines long.
- (3) Flowers mostly solitary, and terminal.
- (4) Anther lobes are less distinct from each other.

EUCALYPTUS LEUCOXYLON, F. v. M. (Myrtaceae).

Dr. Woolls (Proc. Linn. Soc. of N.S. Wales, vol. 1, 2nd ser., 1886, p. 861) first showed that under this head Mueller and also Bentham wrongly included the S. Australian White Gum and the Red Flowering Ironbark. The name of E. Leucoxylon can be restricted to the former, as proposed, but if the name E. sideroxylon is to be given to the Red Flowering Ironbark, it cannot be given on A. Cunningham's authority. In the Kew Index, and in Baker's Research on the Eucalypts, p. 111, and also in Benth. Flora, the reference is given as E. sideroxylon, A. Cunn., in Mitch. Trop. Austr., 339 (name only). The reference actually is, "Among the larger forest trees was a Eucalyptus, allied to, but probably distinct from, the E. sideroxylon, A. Cunn." This is a most curious reference on which to base a species, a casual reference to a name by another writer. Dr. Woolls does not give a formal description, but details the differences between the two species very fully, and the name can only stand on his authority as C. sideroxylon, Woolls.

Mr. Baker (l.c., p. 111) notes as a specific distinction that the rim of the capsule soon becomes detached in *E. sideroxylon*. The same applies, however, to *E. Lencoxylon*, as is well shown in specimens forwarded by Mr. A. D. Hardy from Studley Park, Oct., 1909, but this does not affect the validity of the two species. As in many Eucalypts, the length of the style varies in different flowers of *E. sideroxylon* even when taken from the same tree.

Grevillea Helmsii, Mueller and Tate in Tr. of the Roy. Soc. of S.A., vol. xvi., p, 351 (1896), also Botan. Centrlb. lxv., No. 11 (1896) = G. plurijuga, Mueller in Fragm. iv., p. 84 (1863-4). (Proteaceae).

Diels, in Engler's Bot. Jahrb. Bd., xxxv., p. 150, 1905 (Fragmenta Phytographia Australia Occidentale, p. 150), was unable to distinguish between these two species. The only difference appears to be in the greater tendency to hairiness in the pedicels and outside of the perianth in the "Helmsii" specimens, in which, perhaps, the flowers are also a trifle larger. Anthers, disk, torus, ovary, stigma and leaves are identical. The perianth and pedicels of *G. plurijuga* are not entirely glabrous, as stated in the original description.

Linaria Pelliseriana, L. (Scrophulariaceae). "Pelisser's Toad Flax."

This plant was recorded in 1908 from the Mitta Mitta R., and Chiltern. It appears to be spreading in paddocks at Sandy Creek, Wodonga, and is undoubtedly naturalized as an alien. It is a native of S. Europe and Asia Minor.

LINDSAYA TRICHOMANOIDES, Dryander. (Filices).

Collected National Park, Wilson's Promontory, 28/10/09, by Dr. Sutton, J. W. Audas and P. R. H. St. John.

This forms an addition to the Flora of Victoria, being only recorded previously from Tasmania and N.S. Wales. It appears to be rare in all the localities where it occurs, and is the third case of a member of the Victorian Flora having its sole and only Victorian locality in the National Park.

Macadamia verticillata, F. v. M.; ex Bentham's Flora Australiensis, vol. v., p. 207 (Helicia verticillata, F. v. M., Fragm. vi., 191. (Proteaceae). = Brabejum stellatifolium, L.

This plant, collected by Leichardt, is given in Bentham's Flora as from Queensland or N.S. Wales, precise locality unknown.

The plant is not recorded in the Floras of either Queensland or New S. Wales. Mueller noted (Fragm., viii., 150) its resemblance to the S. African Brabejum stellatifolium, L., and suggested that this species and Macadamia (Helicia) ternifolia possibly belonged to the genus Brabejum. Macadamia ternifolia is apparently valid, and is accepted in Engler's Pflanzen familien, but M. verticillata is identical with Brabejum stellatifolium, and the single supposed Australian specimen was evidently taken by Leichardt from a cultivated tree.

ORTHOCARPUS PUSILLUS, Benth. (Scrophulariaceae).

C. L. Forrest, Colac, Nov., 1905; Irrewarra, Nov., 1909. This little weed has been mistaken for a form of *Bartsia latifolia*. It is a native of California, and though apparently not particularly abundant in its native home, has permanently established itself as a naturalized alien in Victoria. Its properties are not known, but it does not at present appear to be a serious weed.

Pithocarpa corymbulosa, Lindl. (Compositae). Woorooloo, West Australia. Max Koch, Jan., 1908. No. 1895.

PITTRODIA (CHLOANTHES) COERULEA (F. v. M. and Tate).

Ewart and White. (Verbenaceae).

The unnamed specimens of this plant among the supplements in the National Herbarium had been examined, and were about to be described as a new species, when it was found that they had already been described under *Chloanthus* (Bot. Centralblatt 1893, p. 317). Curiously enough, Mueller neither labelled the type specimens nor inserted the name in the Census, although the species is certainly a valid one. The plant has a pleasant fragrance when rubbed or broken. The stamens are four in number. The seeds are apparently endospermic. The other features are as in the original description under Chloanthus. *New locality, between Upper Blackwood R. and L. Lefroy, 1893. Miss M. Cronin

Tetratheca ericifolia, Sm., var. rubaeoides, A. Cunn. (Tremandreae).

Vereker Range, Wilson's Promontory; Audas and St. John, Oct., 1909. The only recorded locality for this N.S. Wales plant in Victoria it being the fourth peculiar to the National Park.

TRICHINIUM (PTILOTUS) ERIOTRICHUM, W. V. Fitzgerald, MS Ewart and White, n. sp. (Amarantaceae).

Cowcowing, Max Koch, 1904.

Apparently a perennial herbaceous plant, the length of specimens examined being 8-10 inches. Stems slender, wiry, and rather sparsely branching, covered with white felt-like hairs, which are thicker on the younger branches. Leaves ovatelanceolar, half to one inch long, the under surface somewhat densely villous, and with a fairly prominent midrib. Alternate, shortly petiolate, the internodes being about 1 inch long. Flowers terminal on the end of pedicels of about three-quarters to one and a-half inches in length. Spikes almost hemispherical, flowers sessile. Bracts small, concave, slightly hairy, one to each flower, bracteoles larger, scarious and glabrous, 3 in number. Perianth segments 5, the two outer larger; the scarious margin is blunt, slightly toothed and straw-coloured; outside quite covered over by the long jointed hairs which spring from the lower half of the segments.

The outer segments measure about 1.5 lines, and the hairs 3.0 lines.

Anthers 3, rather long, conspicuously 2-celled, innate; filaments not dilated at the base, united in a cup which is adherent to the perianth tube. Ovary glabrous, style short and simple, stigma capitate.

ROMULEA (TRICHONEMA) CRUCIATA, Ker. Gawl. (Irideae).

Specimens of Onion Grass forwarded to Prof. Beguinot, of Padua, were marked: Romulea rosea (L.), Eckl.; var. parviflora, Beg.; with R. parviflora, Eckl., and R. rosea, var. parviflora, Baker, as synonyms. In Beguinot's Rivisione delle

"Romulea" (Ann. du Cons. et du Jard., Bot. de Geneve, 1907-1908), pp. 14-15, no variety "parviflora" is recognised under R. rosea, but a variety parviflora, Beg., is given under R. cruciata (Jacq.), Beg. from the Cape of Good Hope. As Beguinot does not mention Baker's Romulea longifolia, and gives Trichonema cruciatum under R. cruciata, var. vulgaris, the difficulty still remains unsettled.

Trichonema ochroleuca, Ker. of Benth. Flora, vi., p. 399, is made Romulea chloroleuca by Baker, and is classed as a variety chloroleuca of R. rosea by Beguinot. The Kew Herbarium (Kew Bulletin, 1908, pp. 307-309) does not accept Beguinot's views, and refers our plant to Romulea Bulbocodium, Seb. and Maur., with R. rosea, Eckl., as a synonym.

Schoenus nitens, Poir., var. major, n. var.

The spikelets are in clusters of up to 20 or more, instead of 2 to 6, and the plants up to 16 inches in height, instead of 1 to 12 inches.

Near Mt. Hunter, National Park, Wilson's Promontory, Audas and St. John, Oct., 1909.

STYLIDIUM DIELSIANUM, E. Pritzel. Fragm. Phyt. Austr. Occ., p. 596. (Stylideae).

The plant comes near to S. Merrallii, F. v. M., the basal or rosetted leaves having white margins, and being minutely apiculate, the labellums in both is small, rounded with two pointed basal appendages, but the gynostemium in S. Dielsianum is shorter, the leaves narrower, and the plant has creeping leafless runners. Nevertheless the two species may prove indistinguishable as such when material from varied localities is available.

THELYMITRA CARNEA, R. Br. (Orchideae).

This widely spread species of orchid occurring in South Australia, Tasmania, Victoria and N.S.Wales naturally varies slightly in different habitats, and several forms have been described as distinct species. Thus:—

T. ELIZABETHAE, F. v. M., in Vict. Nat., vol. vii., p. 116, 1890, differs from T. carnea merely in trifling differences of colour, and in its somewhat smaller size. Its only locality is near Camberwell, Nov., 1890, and Sept., Oct., 1900.

T. RUBRA, Fitz., in Gard. Chron., 1882, i., p. 495.

Mount Lofty, S. Australia, Oct., 1881; Blackwood, S. Australia, October, 1906, R. S. Rogers.

This is stated to differ from T. carnea in its flowers opening, while those of T. carnea are supposed always to remain closed, which is not correct.

T. Mackibbinii, F. v. M., in Melb. Chemist, xl., 1881

Upper Loddon, R. J. Mackibbin, Sept., 1881; Smythe's Creek, C. Collyer, Nov., 1883. In Mueller's Census it is given as from W. Australia, S. Australia and Victoria. The Herbarium contains Victorian specimens only, but Mueller considered *T. rubra* to be identical with his species, and therefore extended the locality. It is doubtful whether any of these forms extend to W. Australia.

All are undoubtedly forms of T. carnea, and the specific names synonyms to that species.

EXPLANATION OF PLATES.

PLATE LVI.

- Fig. 1.—Angianthus axiliflorus, Ewart and White. Plant (slightly magnified).
 - 2.—One-flowered partial head (magnified).
 - 3.—Single flower (magnified).

PLATE LVII.

- Fig. 1.—Calocephalus Skeatsiana, Ewart and White Plant (about natural size).
 - 2.—Leaf (enlarged).
 - 3.—Bract from one of the partial heads (enlarged).
 - 4.—Single flower (enlarged).

PLATE LVIII.

Fig. 1	.—Inner	bract o	f partial	head of	Calocephalus	Knappii.
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2.—Outer	,,	,,	,,	,,	>>	
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3.—Inner " " " multiflorus.

4.—Outer ,, ,, ,, ,, ,,

5.—Inner " " " " Skeatsiana

6.—Outer ,, ,, ,, ,, ,, ,,

7.—Inner " " Eriochlamys Behrii. 8.—Outer " " "

9.—Flower of Calocephalus Knappii.

PLATE LIX.

- Fig. 1.—Halgania tomentosa, Ewart and White. Part of flowering branch (natural size).
 - 2.—Fruit (natural size).
 - 3.—Transverse section of leaf (greatly magnified).
 - 4.—Part of flowering branch of Pityrodia coerulea (F. v. M. and Tate), Ewart and White. (Natural size.)
 - 5.—One of the 4 divisions of the fruit of Pityrodia coerulea, (onlarged).

PLATE LX.

- Fig. 1.—Portion of flowering branch, Trichinium eriotrichum.
 - 2.—Outer bract.
 - 3.—Bracteole.
 - 4.—Perianth segment with a stamen attached to the staminal ring.

INTRODUCED EXOTICS NOT YET SUFFICIENTLY ESTABLISHED TO

BE CONSIDERED NATURALISED.

Calycotome spinosa, Link. (Leguminosae). "Prickly Broom."

A native of South-west Europe.

Growing along roads at Bolwarrah, near Ballarat, July, 1909, C. French, junr.

